

REMARKS

Applicants appreciate the Examiner's thorough examination of the present application as evidenced by the Office Action of September 10, 2004 (hereinafter "Office Action"). Applicants especially the indication that Claims 21 - 24, 50 - 53, and 78 - 81 recite patentable subject matter. In response, Applicants have canceled Claims 1 - 3, 17 - 19, 30 - 32, 46 - 48, 59, 60, and 74 - 76. In addition, Applicants have amended independent Claims 4, 33, and 61 by incorporating recitations from dependent Claims 11, 40, and 68, respectively. Applicants have not written dependent Claims 21, 50, and 78 in independent form at this time as Applicants respectfully maintain that independent Claims 20, 49, and 77 are patentable over the cited references. Accordingly, Applicants submit that all pending claims are in condition for allowance. Favorable reconsideration of all pending claims is respectfully requested for at least the reasons discussed hereafter.

Independent Claims 4, 33, and 61 are Patentable

Independent Claim 4 stands rejected under 35 U.S.C. §102(b) as being anticipated by European Patent Application EP 0 945 788 A2 of Hocevar et al. (hereinafter "Hocevar"). Independent Claim 4 has been amended to incorporate recitations from dependent Claim 11 and recites, in part:

providing a command queue in the system memory;
loading a command block into the command queue using the host processor;
executing the command block using the cryptographic processor; and
notifying the host processor that the command block has been executed by updating a completion field in the command block using the cryptographic processor.

Claims 33 and 61 include similar recitations. Claim 11 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Hocevar in view of U. S. Patent No. 5,706,489 to Chi et al. (hereinafter "Chi"). The Office Action acknowledges that Hocevar does not disclose or suggest notifying the host processor that the command block has been executed by updating a completion field in the command block using the cryptographic processor, but alleges that Chi provides the missing teachings at col. 7, line 59 through col. 8, line 5 and col. 8, lines 42 - 50. (Office Action, pages 11 - 12).

Applicants respectfully submit that the first passage of Chi cited in the Office Action (col. 7, line 59 through col. 8, line 5) describes a halt command for a parallel processor and appears to include no teaching or suggestion related to notifying a host processor that a command block has been executed by updating a completion field as recited in Claim 4, as amended. The second passage of Chi cited in the Office Action (col. 8, lines 42 - 50) describes setting a field in a header block 215 to indicate when an asynchronous operation is completed. The header block 215 is described at col. 4, lines 37 - 47 and appears not to be used to communicate information from the parallel instruction execution (PIE) facility 120 to the processing unit 110, but is instead used to communicate information from the processing unit 110, to the PIE facility 120.

Accordingly, for at least the foregoing reasons, Applicants respectfully submit that independent Claims 4, 33, and 61 are patentable over Hocevar in view of Chi, and that Claims 5 - 10, 12 - 14, 34 - 39, 41 - 43, 62 - 67, and 69 - 71 are patentable at least per the patentability of independent Claims 4, 33, and 61.

Independent Claims 15, 44, and 72 are Patentable

Independent Claims 15, 44, and 72 stand rejected under 35 U.S.C. §102(b) as being anticipated by U. S. Patent No. 6,075,456 to Hussain et al. (hereinafter "Hussain").

Independent Claim 15 recites, in part:

- providing a command queue in the system memory;
- loading a command block into the command queue using the host processor;
- setting a value of an interrupt field in the command block to request an interrupt when the command block has been executed;
- executing the command block using the cryptographic processor; and
- invoking an interrupt using the cryptographic processor after executing the command block if the interrupt field in the command block is set to the value to request the interrupt.

Claims 44 and 72 include similar recitations. The Office Action cites col. 8, lines 53 - 59 of Hussain as disclosing invoking an interrupt using the cryptographic processor after executing the command block if the interrupt field in the command block is set to the value to request the interrupt. (Office Action, page 10). Applicants respectfully disagree with this interpretation of Hussain's teachings. The aforementioned passage of Hussain cited in the

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Office Action pertains to the rendering engine 104 generating an interrupt for the host processor rather than the graphics processor 114. The rendering engine 104 is used for address translation (Hussain, col. 4, lines 2 - 8) and, therefore, is unrelated to a cryptographic processor as recited in Claims 15.

Accordingly, for at least the foregoing reasons, Applicants respectfully submit that independent Claims 15, 44, and 72 are patentable over Hussain, and that Claims 16, 45, and 73 are patentable at least per the patentability of independent Claims 15, 44, and 72.

Independent Claims 20, 49, and 77 are Patentable

Independent Claim 20 stands rejected under 35 U.S.C. §102(b) as being anticipated by Hovevar. Independent Claim 20 recites, in part:

providing a command queue in the system memory;
loading a command block into the command queue using the host processor, the command block comprising an input data field that contains input data;
performing an operation based on the input data using the adjunct processor to generate a result; and
storing the result in the input data field such that at least a portion of the input data is overwritten.

Claims 49 and 77 include similar recitations. The Office Action asserts that independent Claim 20 is rejected for the same reasons as independent Claim 4. (Office Action, page 7). Applicants note, however, that Claim 20 includes the highlighted recitation "storing the result in the input data field such that at least a portion of the input data is overwritten." Applicants respectfully submit that Hovevar contains no disclosure or suggestion of at least this highlighted recitation.

Accordingly, for at least the foregoing reasons, Applicants respectfully submit that independent Claims 20, 49, and 77 are patentable over Hovevar, and that Claims 21 - 24, 50 - 53, and 78 - 81 are patentable at least per the patentability of independent Claims 20, 49, and 77.

Independent Claims 25, 54, and 82 are Patentable

Independent Claim 25 stands rejected under 35 U.S.C. §102(b) as being anticipated by Hovevar. Independent Claim 25 recites, in part:

providing a command queue in the system memory;
providing a read address for the command queue and a write address
for the command queue;
loading a random number sample into the command queue using the
cryptographic processor beginning at the write address; and
reading the random number sample using the host processor beginning
at the read address.

Claims 54 and 82 include similar recitations. The Office Action cites col. 3, line 38 through col. 5, line 21 of Hocevar as disclosing the recitations of Claim 25. Applicants respectfully disagree with this interpretation of Hocevar's teachings as Applicants can find no mention of, at least, loading a random number sample into the command queue and reading the random number sample recitations. In particular, Applicants cannot find any reference to a random number sample in Hocevar's disclosure.

Accordingly, for at least the foregoing reasons, Applicants respectfully submit that independent Claims 25, 54, and 82 are patentable over Hocevar, and that Claims 26 - 29, 55 - 58, and 83 - 86 are patentable at least per the patentability of independent Claims 25, 54, and 82.

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CONCLUSION

In light of the above amendments and remarks, Applicants respectfully submit that the above-entitled application is now in condition for allowance. Favorable reconsideration of this application, as amended, is respectfully requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (919) 854-1400.

Respectfully submitted,



D. Scott Moore
Registration No. 42,011

Myers Bigel Sibley & Sajovec, P.A.
P. O. Box 37428
Raleigh, North Carolina 27627
Telephone: (919) 854-1400
Facsimile: (919) 854-1401
Customer No. 20792

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Traci A. Brown